

REMARKS

The present amendment is submitted in an earnest effort to advance this case to issue without delay,

1. The Examiner's objections to claims 20, 29, 42 - 44 and 46 for lack of antecedent basis for "the borehole" is acknowledged and appropriate correction has been made.

2. All of the independent claims, where necessary, have been modified to recite the electric pump disposed downhole along the tubing for drawing a fluid from an annulus between the tubing and an inner surface of the borehole and up through a bore of the tubing. Claims 22 and 23 have been cancelled as superfluous while other claims have been modified based upon the changes made to the independent claims.

3. Claims 44 and 45 no longer can be considered anticipated by PORTMAN et al since this reference does not disclose an electric pump downhole on the tubing and functioning as recited.

4. The claims in the case have been rejected under 35 USC 103(a) as allegedly obvious from a combination of MESSENGER Patent 4,368,787 with TULLOS et al Patent 4,258,802.

Reconsideration of that rejection is requested in view of the fact that neither reference would fairly suggest an electric pump disposed downhole which would draw the drilling fluid from an annulus between the tubing and an inner surface of the borehole and up through a bore of the tubing.

"US 4,368,787 (MESSENGER) shows a drill string where well fluid circulates down the well annulus and is pumped up the bore of the drill string. The pump however is driven by the drill bit, specifically it is driven by the differential torque between the drill bit when drilling and the drill string above the pump. It is not immediately evident how the pumping system of MESSENGER would be implemented in conjunction with a drill bit driven by a downhole motor as suggested in the introduction to US 4,258,802 (TULLOS), presumably the downhole motor would cause the drilling assembly to rotate, and be situated above the pumps so that they continue to be driven by the differential torque.

The use of the differential torque created by the reaction of the drill bit and the bottom of the bore hole means that the drill bit must be engaged with the borehole bottom for the pump to function, and if the drill string is raised the action of the pump will cease. During the drilling of a well, the drillstring is often raised to carry out 'wiper trips', where the

sides of the uncased borehole are cleaned by the passing of the drillbit. In MESSENGER, fluid circulation would stop or be considerably impaired during such operations, as the drill bit experiences no or little reaction during the wiper trip. The present invention as claimed allows circulation to continue at an optimum level throughout the wiper trip.".

The claims previously rejected on a combination of MESSENGER and TULLOS et al alone thus must be considered to be allowable.

5. Certain claims in the case were rejected on a combination of MESSENGER and TULLOS et al with DOREL patent 6,047,784. The latter reference does have a downhole electric motor, but Applicant respectfully submits that with the interpretations of MESSENGER and TULLOS et al provided above, it cannot be said to be obvious to provide the DOREL electric motor in the MESSENGER/TULLOS et al combination if that combination indeed is meaningful.

Thus the claims in the case must be considered to be allowable over the combination of MESSENGER, TULLOS et al and DOREL as well.

6. Other claims in the case have been rejected as obvious from MESSENGER in view of DOREL et al further in view of WALLUSSEK et al Patent 4,596,293.

That rejection cannot stand either.

"US Patent 4,596,293 (WALLUSSEK) shows a directional drilling system, comprising a spindle in an outer tube, the spindle being oriented by a hydraulic pump situated between the spindle and the tube. The pump may be powered by the rotation of the drill string, or by electric power.

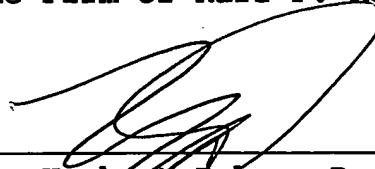
"The pump in WALLUSSEK is part of a closed assembly to orient the drill bit. It is not in contact with, and does not circulate the well fluid. A pump disposed in a drilling assembly suitable for occasional orientations of the drill bit would not be sufficiently powerful, capacious or robust to circulate fluid and suspended cuttings within a well bore. We submit that the skilled man would not consider there was anything useful disclosed in WALLUSSEK when considering the circulation of well fluids.".

7. The addition of PORTMAN to the combination of MESSENGER and TULLOS et al has been noted, but with the present amendment of claims, cannot stand as a basis for rejection here.

In the opinion of Applicant, therefore, claims 20, 21, 24 through 46 ought to be considered to be allowable and an early notice to that effect is earnestly solicited.

8. A petition for an automatic two month extension of the term for reply is enclosed together with a charge form applying the fee to a charge card of the undersigned.

Respectfully submitted,
The Firm of Karl F. Ross P.C.

By: 
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Enc: Petition for Extension
PTO 2038 Charge Form

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